

# SPACE OPERATIONS PROJECT OFFICE HIGHLIGHTS

July 8, 2011

## ISS AND HUMAN HEALTH OFFICE (MSI)

- **ISS RESEARCH PROJECT:**

**SHERE II Completes Procedure Review, Hardware Gather and Install:** Astronaut Satoshi Furukawa completed the Shear History Extensional Rheology Experiment II (SHERE II) Procedure Review and Hardware Gather on June 28, 2011. On June 30, 2011, Satoshi successfully installed the SHERE II hardware in the Microgravity Science Glovebox. The checkout tests for SHERE II are nominally scheduled for operations on July 19, 2011.

The main objective of SHERE II is to investigate the effect of preshearing on the stress/strain response of a dilute polymer solution filled with PMMA (small glass beads) particles being stretched in microgravity. Benefits include providing insight into ways to optimize polymer-processing operations that involve complex flows, i.e. both shearing (rotation) and elongation (stretching). Current applications including shearing in spinneret prior to fiber spinning of both synthetic and natural polymers (e.g., Lycra, Kevlar, spider silk) as well as complicated shearing and stretching in extruder and nozzles. For more information about SHERE, see: [http://issresearchproject.grc.nasa.gov/MSG/SHERE\\_II/](http://issresearchproject.grc.nasa.gov/MSG/SHERE_II/) (POC: MSI/Nancy R. Hall, (216) 433-5643).